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NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
P.O. Box 2574, Station B, London, ON. N6A 4G9

January, 1992 92-1

MEMBER'S NIGHT!!!

Dana Poulton - Investigations at the Late 17th Century Seneca Bead Hill Site

Mike Baker - London Heritage Proposal to Use Grosvenor Lodge

Laura Finsten - Something About Sierra Mixteca

Yes, its that time of year again for speaker night. Previous years have seen a wide assortment of presentations from members, and this year will be no different. So come on out and meet some people and hear some interesting discussions (ie. see some neat slides!). Meeting time and place is Thursday, February 13th, 8 PM, at the Museum of Indian Archaeology. In an attempt to allow people from out of town a chance to return home at a decent hour, speaker night will start right at 8 PM, so make sure you are on time! See you there.

Next Month (March 12th): **Linda Gibbs** on sexing, citrate studies and human remains

EXECUTIVE REPORT

1992 MEMBERSHIP FEES ARE NOW DUE, IF YOU HAVEN'T YET DONE SO, PLEASE SEND THEM IN

At the Christmas party last December, the 1992 London Chapter Executive was acclaimed during the Chapter's annual business meeting. Pat Weatherhead will serve as president, Chris Ellis as vice-president, Harri Mattila as treasurer, Tom Arnold as secretary, and Lorelyn Giese and Teresa Smith as Directors. The incoming Executive would like to extend thanks to out-going members Megan Cook, Bev Morrison, and Mahillah Rafek for their work in 1991. As announced previously, Peter Timmins is now the Chapter's representative on the London LACAC. As well, Neal Ferris is serving as chair of the newsletter editorial committee. Here's hoping 1992 is successful for the Chapter and its membership!

On the Occasional Publications front, we continue to do well with sales of the Prehistory volume. From our original run of just under 1000 copies, we have less than 300 left, and we'll likely be sold out of the run by summer. Soon the Executive will have to review options for a second run! Also, work is underway now to produce 1 and possibly 2 new volumes of the series by the spring of this year. Keep watching this newsletter for further information.

★★★★★★★★★★★★★★★ STUFF GOING ON ★★★★★★★★★★★★★★★

McMaster Anthropology Society Annual Symposium, February 14 & 15, 1992:

CULTURES IN CONTACT

For more information contact the McMaster Anthropology Society, Chester New Hall 524, 1280 Main Street West, Hamilton, Ontario L8S 4L9 (416) 525-9140 ext.4423.

★★★★★★★★★★★★★★★ STUFF GOING ON ★★★★★★★★★★★★★★★

SOCIAL REPORT

Well, once again the Chapter's Christmas party was a hit. Our thanks to Neal and Nina for hosting the event. One of the topics that was discussed, both at the Christmas party and more recently, is the problem of getting speaker nights started on time. We always say the event will start at 8 PM, but usually things don't get underway until later, in part because of the socializing which precedes these events. While mingling is fun, the delay in starting usually means things don't wrap up until late, which is a problem for people who travel from out of town. So, in order to get things wrapped up at a respectable hour, we are going to begin starting at 8 PM promptly! Please come a little earlier if you want to socialize before hand, or save everything up until after the speaker night is over - so that everyone can get home at a good time. Thanks!

EDITOR'S NOTE

This month we feature yet another report from the MTO Southwest gang. Peter Timmins discusses a small Early Woodland site, once again demonstrating the range of archaeological sites one encounters doing CRM work continually challenges our traditional notion of "site types"!

The Billiard Site (AhHa-76): A Small Meadowood Component in the Region of Hamilton-Wentworth, Ontario

Peter Timmins

Introduction

The Billiard site (AhHa-76) was discovered in 1988 during this archaeological survey (Lennox and Murphy 1989). It is located in Ancaster Township, in the Regional Municipality of Hamilton-Wentworth, midway between the modern day villages of Alberton and Jerseyville. It lies within the drainage of Big Creek which flows southerly, eventually entering the Grand River near Middleport (Figure 1). The Billiard site occurs in a transition zone between the Haldimand Clay Plain and a northerly extension of the Norfolk Sand Plain (Chapman and Putnam 1984). While soils on the site proper are a fairly heavy clay loam, they grade to lighter sands on the tops of some knolls in the area.

The general topography of the area is one of rolling terrain, largely due to several deep gullies which have cut into the sides of the Big Creek valley. The site itself is situated within a cultivated field on an elevated plateau, bounded to the south by such a gully and to the north and east by the valley of a minor tributary of Big Creek, which meets the main branch about 220 meters southwest of the site (Figure 1). The distance to this tributary is about 150 meters either to the north or the east, however, the nearest source of potable water may have been a small spring-fed pond located about 90 meters to the east, in the woodlot adjacent to the site. Although the site is located on an elevated plateau, the main site area is actually situated within a slight depression on top of the plateau. This situation would have hidden the camp from view and afforded better shelter from the elements.

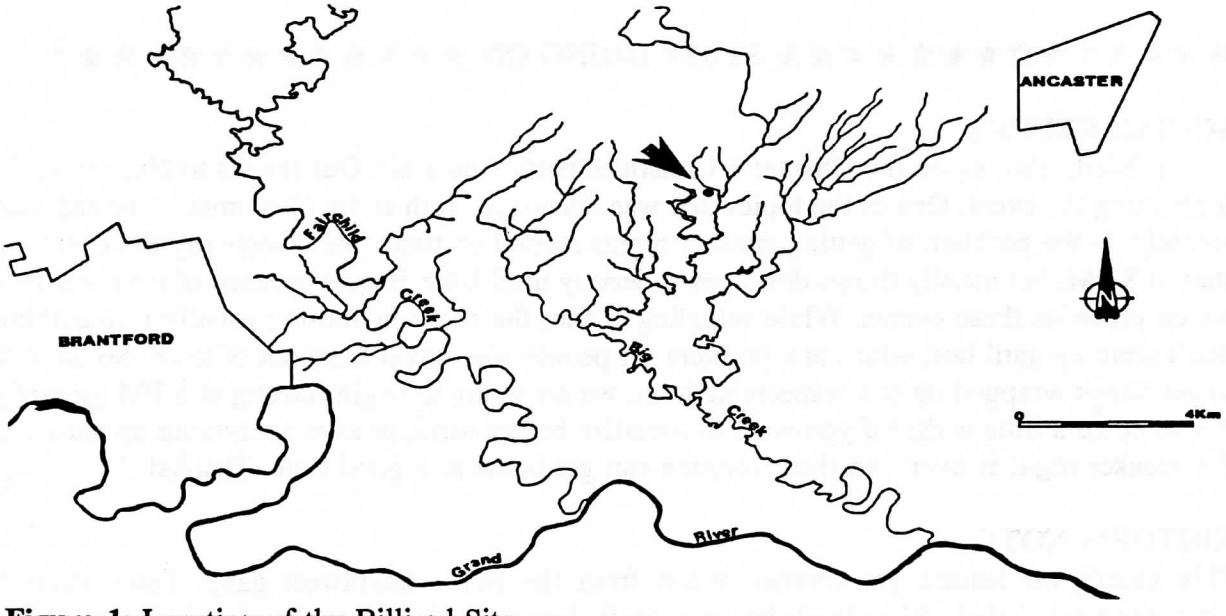

Figure 1: Location of the Billiard Site

The Big Creek valley is about 200 meters wide in the site vicinity and would have comprised a series of distinct floodplain and wetland habitats during the time of the site occupation. Today the valley is a combination of pasture and wetland; some segments have been flooded in the past to create ponds or reservoirs. The forested upland areas around the Billiard site today support a mixed deciduous forest dominated by maple, beech, basswood, and oak. The historic vegetation of the area, as noted by early land surveyors, was apparently dominated by oak with lesser amounts of maple, basswood, and pine (Finlay 1978).

Archaeological Investigations

At the time of its discovery in 1988 the Billiard site was ploughed and yielded a small sample of stone tools and chipping debris distributed over an area measuring approximately 15 x 50 meters. Material was recovered in two distinct clusters, a dense northerly concentration designated Locus A and a more diffuse southerly concentration designated Locus B. Additional surface collections in 1989 and 1990 generally confirmed this spatial pattern, although some intervening material was recovered between the loci (Figure 2). Diagnostic projectile points recovered from the surface indicated the presence of an Early Woodland Meadowood component. Test excavations, conducted in the fall of 1990, proceeded with the excavation of one meter squares in a five meter grid pattern to systematically sample the ploughzone deposit. Excavation was conducted by shovel and trowel with all soil screened through 6 mm mesh. These excavations proceeded very slowly as the heavy clay soils were extremely difficult to screen.

The test units were largely unproductive as only one square, located in Locus A, yielded more than six pieces of cultural debris. The excavation was then expanded around this single productive unit (5S5W). Initially, one meter wide trenches oriented east-west and north-south, running through 5S5W, were excavated. These were later expanded to expose a four by five meter block centred on the most productive area (Figure 2). As a general rule, excavations were expanded until yields dropped below 10-12 pieces per unit. Additional excavation beyond this arbitrary cut-off point would have been unproductive in view of the high labour expenditure and the diminishing returns in terms of data recovery. In total, 49 square meters were excavated on the Billiard site in 48 man days.

Feature Analysis and Flotation Results

Careful trowelling revealed the presence of a single sub-surface feature, identified as a small refuse filled depression. This feature was ovate in plan and measured 115 cm in length and 62 cm in width (Figure 3). There was very little soil discolouration, the fill being light brown subsoil mottled with topsoil. The feature extends only 12 cm into the subsoil and displays a non-symmetrical, V-shaped profile (Figure 3). It is obviously not a purposely dug pit and is interpreted as a small natural depression that was fortuitously filled with habitation debris.

Approximately half of the feature fill (45 litres) was subjected to flotation using the SMAP technique. This was initially unsuccessful as the clay did not readily break up. Only 23 chert flakes were recovered from the initial flotation along with residual clay fill that did not

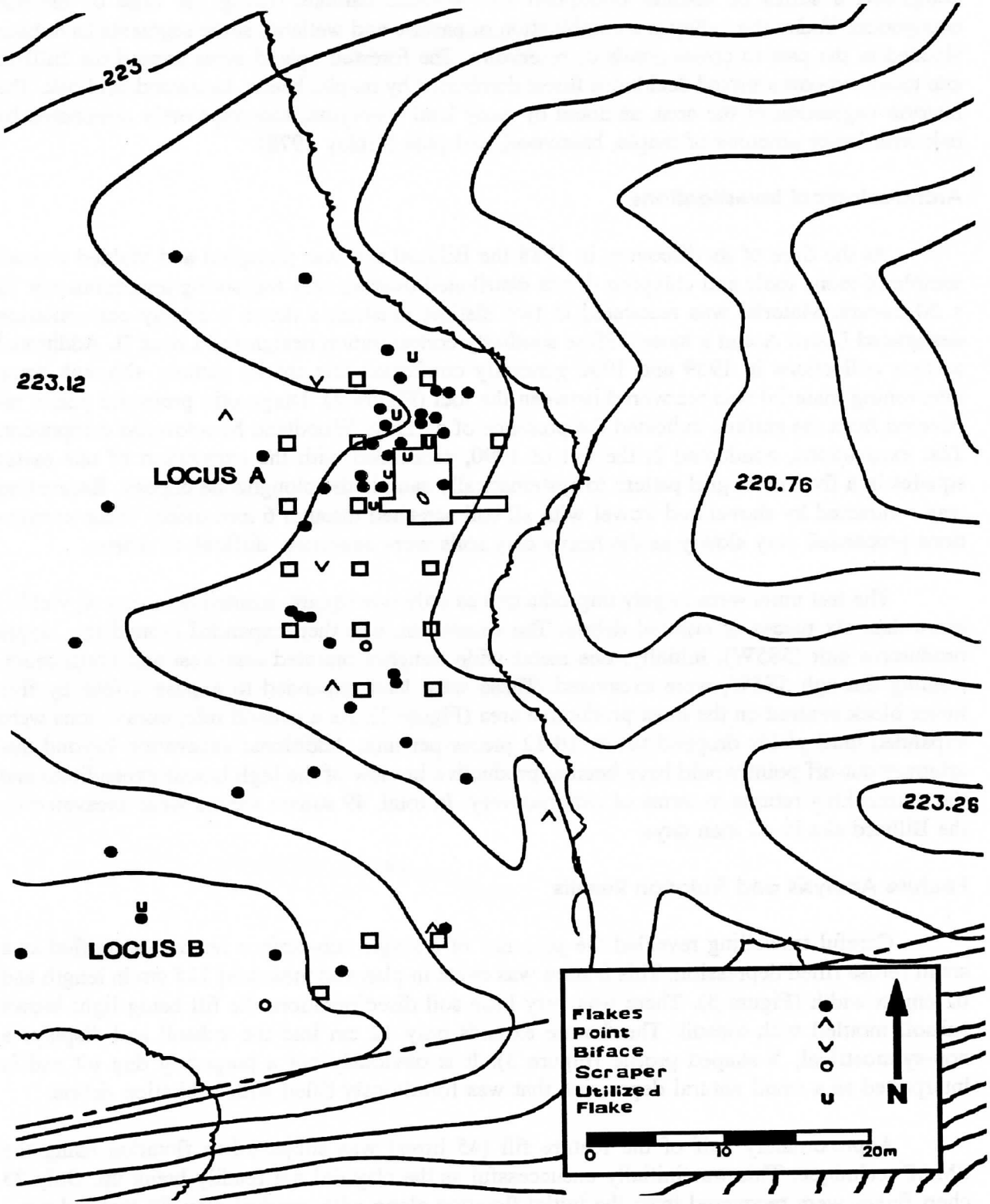

Figure 2: Surface Artifact Distribution and Area Excavated

dissolve. This residual fill was re-processed by soaking small quantities of the rock hard clay in a solution of Bio-Ad and water. The Bio-Ad acted as a deflocculant, separating the clay particles and creating a fluid solution which was then subjected to the regular SMAP technique (R. Fecteau: personal communication). This technique worked remarkably well as 283 small chert flakes were recovered along with small quantities of organic material.

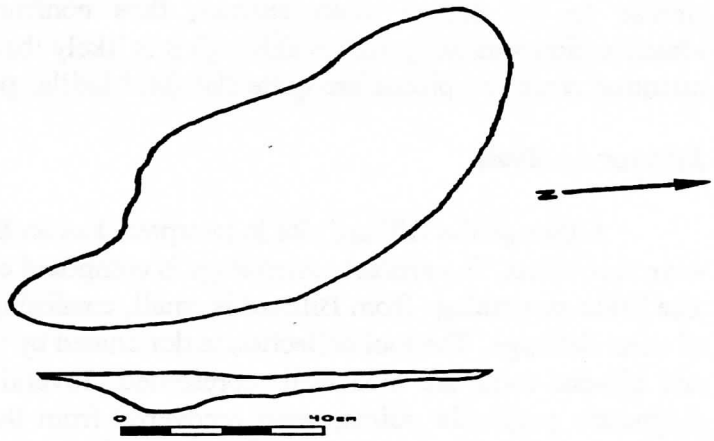

Figure 3: Plan and Profile of Feature 1

Prior to obtaining the debitage from flotation most of the flakes recovered from the excavation of the feature were relatively large primary flakes or flake fragments. This limited sample gave an inaccurate view of the flintknapping activity conducted around this feature; small flakes and secondary flakes were rare suggesting that the full range of biface production was not represented. The larger debitage sample from the final flotation contained several secondary flakes from bifaces and hundreds of small, unanalyzable flakes, indicating that all stages of tool manufacture were represented in the debitage. In fact, the feature yielded 227 flakes that were less than 6 mm in size. These flakes were mostly fragmentary and were excluded from analysis due to their small size. Their inclusion in the debitage analysis would have skewed the results since the recovery technique of screening fill through 6 mm mesh is obviously not comparable to recovery by flotation as this example so aptly demonstrates.

Of the 338 chert flakes recovered from the feature, four showed evidence of utilization in the form of use retouch and edge rounding. These were the only tools recovered from the feature. The organic material recovered from the flotation of the feature fill included several small pieces of carbonized plant remains. This extremely fragmentary material has been tentatively identified as butternut shell (C. Murphy: personal communication). Also recovered through flotation were 49 small pieces of white, enamel-like material. Upon microscopic analysis by faunal analyst Harri Matilla this material proved to be smooth on one surface with parallel linear grooves on the opposite surface. The structure of the material was further examined by dissolving a sample in a 5% solution of hydro-chloric acid along with samples of snail shell,

bone, and cervid tooth enamel. The structure of the material in question was found to be most similar to the cervid tooth enamel, thus confirming the enamel identification. Species identification was not possible although it is likely that the enamel came from the teeth of a large mammal since the pieces are quite flat (H. Matilla: personal communication).

Artifact Analysis

Although the Billiard site is interpreted as an Early Woodland camp, no ceramic artifacts were recovered. The artifact assemblage is composed entirely of lithic tools and associated debris. The lithic assemblage from Billiard is small, consisting of 59 chipped stone tools and 684 pieces of chert debitage. The tool collection is dominated by utilized flakes, but retouched flake scrapers and bifacial tools are also well represented. Several of the formal tools, including all of the diagnostic projectile points, were recovered from the surface. Their distribution is shown in Figures 2 and 5. The breakdown of surface collected versus excavated artifacts is shown in Table 1, which lists the total artifact inventory from the site.

Lithic Debitage

The sample of 684 pieces of chert debitage was analyzed following procedures developed by Lennox (1982, 1986) in conjunction with previous Ministry of Transportation excavations. Each flake was classified according to morphological type, and observations were made on raw material type, evidence for heat alteration, and the presence or absence of nodular or tabular cortex.

Raw Material

Chert identification was accomplished visually with the aid of samples in the reference collection of the Ontario Ministry of Culture and Communications, London. Selected flakes were subjected to microscopic comparison with chert samples of known provenance. With the exception of one flake, all of the lithic raw material was identified as Onondaga chert. Onondaga chert outcrops along the Onondaga escarpment between Villa Nova and Fort Erie, the nearest quarry location being about 26 km south of the site. This material also occurs as secondary deposits in cobble form along the Lake Erie shoreline and in river gravels and glacial till throughout southwestern Ontario. The single exception of non-Onondaga material was tentatively identified as Ancaster chert from the Hamilton area.

Debitage Morphology

This aspect of the lithic analysis is performed to determine the nature of the lithic reduction activities conducted on the site. The flake types employed are similar to those defined by Lennox (1982, 1986) and are briefly described below.

Primary flakes are flakes from cores. They are usually produced through hard hammer percussion and normally exhibit striking platform to ventral surface angles near 90 degrees. Bulbs of percussion on primary flakes are pronounced. Both striking platforms and dorsal surfaces may retain cortex. Dorsal flake surfaces may display a few large scars from previous flake removals.

TABLE 1

Artifact Class Frequencies

Artifact	Surface f	Excavated f	Total f	%
Debitage	70	614	684	91.81
Utilized Flakes	14	25	39	5.23
Scrapers	5	3	8	1.07
Spokeshave	1	0	1	0.13
Graver	1	0	1	0.13
Unifacial Knife	1	0	1	0.13
Bifaces	1	4	5	0.67
Projectile Points	4	0	4	0.54
Fire Cracked Rock	0	2	2	0.27
Total	97	648	745	100.00

TABLE 2

Debitage Morphology*

Flake Type	f	%
Primary	69	15.10
Secondary	76	16.63
Shatter	10	2.19
Fragment	302	66.08
Total	457	100.00

* excludes flakes less than 6 mm in size

TABLE 3

Utilized Flake Descriptions

Provenience	Flake Type	Metrics L	W	T	Utilized Edge Location	Shape	Length
Feature 1	Primary	40	21	8	LD	S	8
Feature 1	Fragment	(40+)	30	4	LD	CC	9
Feature 1	Primary	31	31	3	DD	CV	9
Feature 1	Fragment	(30+)	29	4	LD	CV	16
2S6W	Fragment	(17+)	(8+)	2	LD	CV	12
2S6W	Primary	24	21	5	DD	S	(11+)
2S6W	Primary	(17+)	11	3	LV	S	(11+)
Surface A	Fragment	(25+)	24	5	LD	CC	12
Surface A	Fragment	28	(19+)	4	DV	S	(13+)
Surface A	Primary	30	18	3	LD	CC	11
Surface A	Fragment	(18+)	(13+)	3	LV	S	8
Surface B	Primary	16	13	7	DD	CV	6
Surface #25	Secondary	(33+)	(31+)	4	LD	CC	(17+)
Surface #44	Primary	25	18	3	DD	CV	14
Surface #19	Fragment	(29+)	27	4	LD	S	31
Surface #11	Primary	(26+)	18	4	DV	S	(6+)
Surface #29	Fragment	(34+)	(31+)	6	LD	S	53
Surface #3	Fragment	(36+)	25	4	DD	S	15
3N6W	Secondary	(18+)	(14+)	2	LV	S	(10+)
1S7W	Fragment	(19+)	18	2	LD	S	(14+)
3S4W	Primary	31	21	3	LV	CC	12
3S4W	Fragment	-	-	2	LD	S	(8+)
5S5W	Fragment	(28+)	23	7	LD	CC	18
5N10W	Primary	(31+)	31	7	LD	S	(7+)
5S2W	Fragment	(31+)	(18+)	3	PD	CC	(8+)
5S2W	Secondary	17	14	2	DD	S	13
5S2W	Primary	16	9	3	LD	S	8
1S6W	Fragment	-	(24+)	4	LV	S	(12+)
3S7W	Secondary	11	8	3	DD	CC	6
6S6W	Fragment	(9+)	(8+)	2	DV	CC	(7+)
10S5W	Primary	41	27	7	DD	S	8
5S3W	Primary	44	23	6	LV	S	36
2S5W	Fragment	30	14	5	PD	S	11
1S5W	Fragment	16	(12+)	3	DD	S	9
5S4W	Secondary	15	10	1	DD	S	8
5S4W	Primary	26	26	4	DD	S	15
Surface #59	Primary	43	18	11	DV	S	19
Surface #50	Fragment	(20+)	26	4	PV	CC	(10+)
Surface #49	Fragment	28	15	3	LV	S	(8+)

Utilized edge location abbreviations: L = Lateral; D = Dorsal; D = Distal
V = Ventral; P = Proximal

Utilized edge shape abbreviations: S = Straight; CV = Convex; CC = Concave

Secondary flakes are flakes from biface or uniface manufacture and maintenance. These flakes are usually smaller than primary flakes and are most often produced by either soft hammer percussion or pressure flaking. Biface flakes display more diffuse bulbs of percussion and have an obtuse platform to ventral surface angle. Uniface flakes are small and display variable platform to ventral surface angles. Dorsal surfaces on both biface and uniface flakes show several small flake scars from previous flake removals. *Shatter* consists of thick, blocky pieces of chert that are thought to result from uncontrolled breakage probably during the initial stage of core reduction. Such fragments lack identifiable striking platforms and normal flake attributes such as well defined ventral and dorsal surfaces. *Flake fragments* are flakes which lack their proximal ends. Such flakes usually cannot be analyzed due to the absence of the striking platform.

The results of the debitage analysis are presented in Table 2, which gives the breakdown of the sample by morphological type. As this table shows, the majority of the flakes (66.1%) were fragmentary and therefore unanalyzable, as were a small number of pieces of shatter. The remaining flakes were almost equally divided between primary and secondary types. The similar occurrence of primary and secondary flakes in the debitage sample suggests that the primary tool making activities conducted on the Billiard site involved the reduction of prepared cores into bifacial tools or the production of simple flake tools such as scrapers or utilized flakes. This is borne out by the presence of both types of tools in the assemblage and by the lack of exhausted cores which suggests that most cores were being fashioned into tools.

Interestingly, cortical surfaces were noted on only six of the 69 primary flakes in the sample. Three of these appeared to have nodular cortex while the other three were from tabular cores indicating that both pebble (cobble) and quarry chert deposits were exploited. However, the relative lack of cortex bearing primary flakes suggests that chert was probably being transported in a prepared core form rather than as large cobbles or tabular chunks.

Debitage Distribution

The ploughzone frequencies of lithic debitage for the area excavated in Locus A are shown in Figure 4. As this figure shows, the highest per square frequencies of lithic debris occur around the single sub-surface feature; frequencies decrease rapidly as distance from the feature increases. As discussed previously, this feature produced almost half of the lithic debitage recovered from the site, including hundreds of very small flake fragments. The feature may also have been the source for much of the material found in the surrounding ploughzone. Ploughing would have disturbed the feature and distributed material throughout the immediate area. The distribution of debitage in the ploughzone corresponds with what one would expect around a single activity area (Lennox 1986:256).

Flake Tools

Flake tools include marginally retouched tools such as scrapers made on flakes as well as utilized flakes that were not usually deliberately retouched but show evidence of use in the form of micro-flaking (use retouch), edge rounding, or use polish on at least one edge. Flake tools dominate the Billiard assemblage in a ratio of 5.5:1 over bifacial tools.

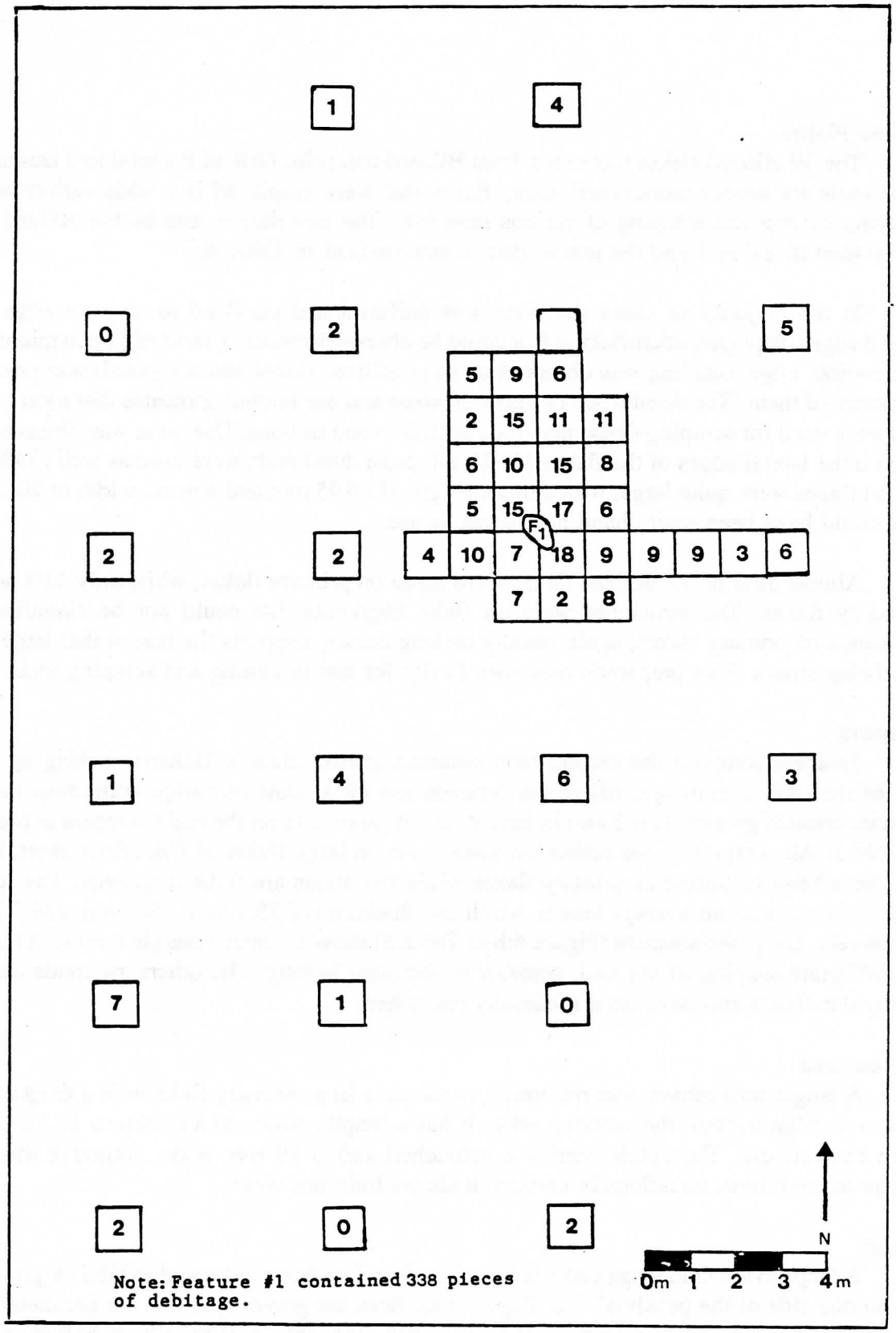

Figure 4: Ploughzone Lithic Debitage Distribution, Locus A

Utilized Flakes

The 39 utilized flakes recovered from Billiard comprise 66% of the total tool assemblage. These tools are simply unmodified, sharp flakes that were employed in a wide variety of tasks involving cutting and scraping of various materials. The descriptive data on the utilized flakes is presented in Table 3 and the metric data is summarized in Table 4.

In the majority of cases use wear was unifacial and confined to a single edge. Most utilized edges displayed microflaking that could be observed visually (unaided); upon microscopic examination, edge rounding was observed on most utilized flakes and use polish was present on a minority of them. The dominance of unifacial wear and use retouch indicates that most of these tools were used for scraping dense materials such as wood or bone. Use wear was observed most often on the lateral edges of the flakes (54%), although distal ends were used as well (38%). The utilized flakes were quite large, with a mean length of 26.95 mm and a mean width of 20.32 mm. Most could have been easily hand held when in use.

Almost 39% of the utilized flakes were made on primary flakes, while only 13% were on secondary flakes. The remainder were on flake fragments that could not be classified. The dominance of primary flakes, again usually lacking cortex, supports the notion that large flakes were being struck from prepared cores specifically for use as cutting and scraping tools.

Scrapers

Scrapers comprise the second most common artifact class at Billiard, making up almost 14% of the tool assemblage. All of the scrapers exhibit at least one edge with steep marginal unifacial retouch greater than 2 mm in height. Descriptive data on the eight scrapers is presented in Table 5. All scrapers in the collection were made on large flakes of Onondaga chert; four of these have been identified as primary flakes while the others are flake fragments. The scrapers are quite large, with an average length, width and thickness of 35.8 mm, 28.5 mm, and 7.25 mm respectively. Only two scrapers (Figure 6:b-c; Table 5) show extensive marginal retouch resulting in a deliberate shaping of the tool, possibly to facilitate hafting. The others are made on linear or irregular flakes and have been minimally retouched.

Spokeshave

A single spokeshave was recovered, made on a large primary flake with a deep notch in one lateral edge to form the working edge. It has a length, width, and thickness of 32, 19, and 4 mm respectively. The notch interior is retouched and is 10 mm wide. Although this notch appears to have been intentionally created, it shows little use wear.

Graver

A large ovate Onondaga flake is heavily utilized on three sides and exhibits a graver-like spur on one side of the proximal end (Figure 6:a). Both the graver spur and the perimeter of the flake show edge rounding and substantial use polish. This tool may have been hafted and used as a combination scraper/graver/perforator. It measures 31 mm in length, 29 mm in width, and is 5 mm thick.

TABLE 4

Utilized Flake Metrics

	Range	Mean	Std Dev
Flake Length (18)	44 - 11	13.13	15.12
Flake Width (28)	31 - 8	14.59	10.77
Flake Thickness (39)	11 - 2	4.10	2.00
Utilized Edge Length (24)	53 - 6	9.41	10.95

TABLE 5

Scraper Descriptions

Provenience	Flake Type	Metrics L	W	T	Retouched Edge Location	Shape	Length
2S6W	Fragment	(21+)	(18+)	3	DV	S	(14+)
2S6W	Fragment	35	(23+)	4	DD	S	15
Surface B	Primary	28	21	5	DD/LD	S	36
Surface #38	Fragment	(28+)	33	10	DD	CV	26
4S5W	Fragment	(30+)	33	6	LD	S	(8+)
Surface #54	Primary	40	27	.10	DD	CV	26
Surface #58	Primary	43	31	8	LD	S	23
Surface #62	Primary	33	26	12	LD	CC	15
	Mean	35.80	28.50	7.25			23.33
	Range	28-43	21-33	3-12			15-36
	Std Dev	5.27	4.31	3.03			6.94

Retouched edge location abbreviations: L = Lateral; D = Dorsal; D = Distal
V = Ventral

Retouched edge shape abbreviations: S = Straight; CV = Convex; CC = Concave

TABLE 6

Projectile Point and Biface Descriptions

Provenience	Form/Shape	Length	Blade Width	Base Width	Thickness	Edge Shape	Base Shape	Comments
Surface A	Triangular Side-notched	(42+)	26	22	6	S	CV	Meadowood - recycled base as perforator
Surface #37	Triangular Side-notched	-	25	25	5	?	S	Meadowood -Eastern Onondaga chert
Surface #52	Triangular Side-notched	-	22	21	6	S	CC	Meadowood
Surface #63	Triangular Expanding Stem	48	28	20	8	CV	CC	Untyped - similar to Ki Lo
Surface #43 15S10W	Ovate Biface	70	43	-	9	CV	-	2 pcs, 1 on surface 1 excavated
1S7W	Biface Edge Fragment	-	-	-	5	-	-	Small fragment
3S4W	Ovate Biface Fragment	(31+)	-	-	(7+)	CV	-	Edge fragment
5N12W (Surface)	Triangular Mid-section	-	34	-	7	S	-	Recent notch
20S5W	Ovate Biface Preform	62	33	-	15	CV	-	Unfinished preform

Edge shape abbreviations: S = Straight; CV = Convex; CC = Concave

All specimens are of Onondaga chert.

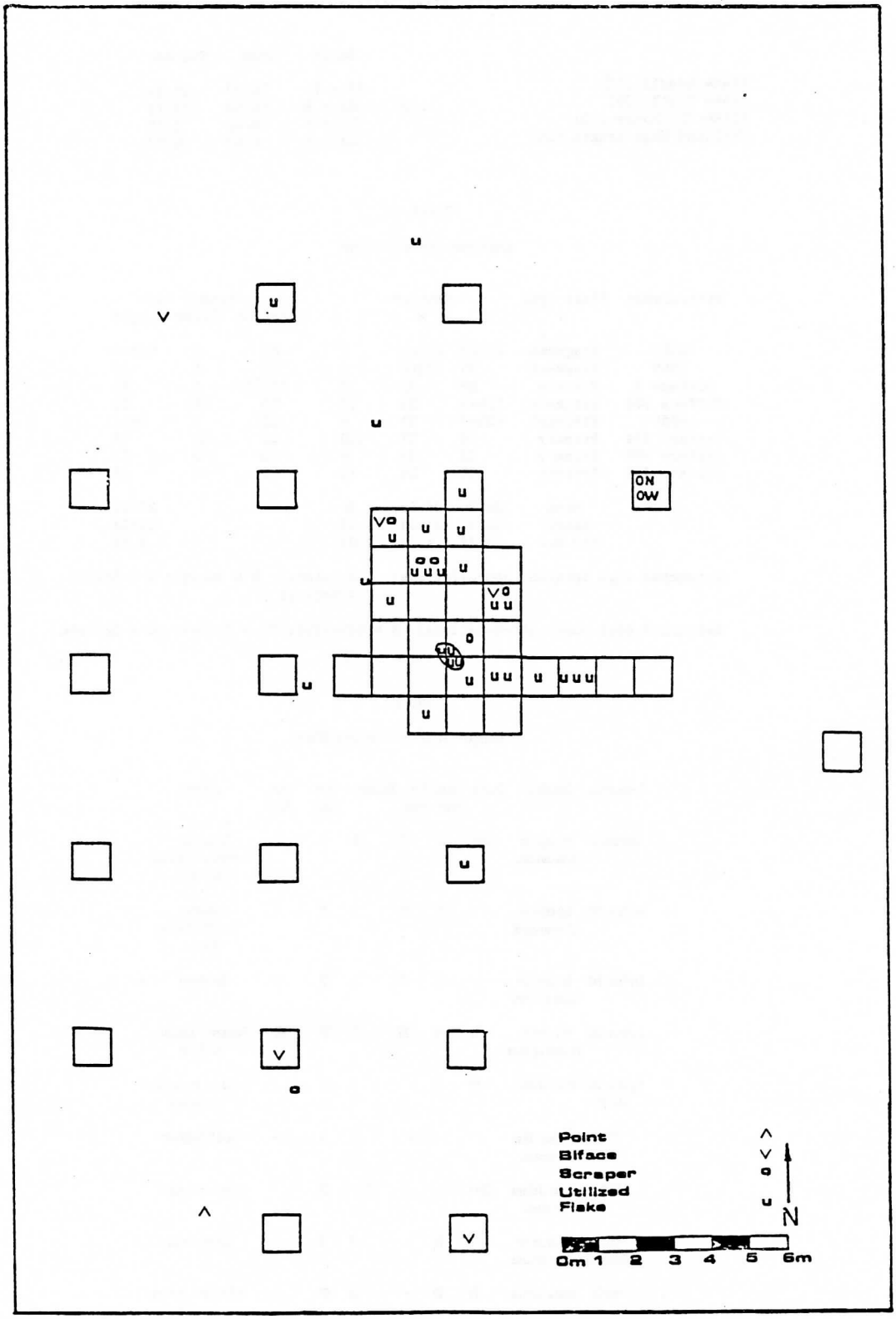

Figure 5: Lithic Artifact Distribution

Unifacial Knife

An ovate unifacial knife of high quality Onondaga chert displays extensive acute angled retouch, polish and use retouch on the dorsal surface of both lateral edges (Figure 7:a). Use retouch also occurs on the ventral surface of this tool suggesting that it was used for cutting a dense material. One end has been retouched to form a short, thinned stem. No traces of wear appear on this stem suggesting that it was a hafting modification. The lateral margins were obviously the principal working edges of the tool. Its length, width and thickness is 44 x 37 x 8 mm.

Bifacial Tools

The only bifacial tools present in the assemblage are bifaces and projectile points. Drills are absent, as are the various types of scrapers and strike-a-lights recycled from Meadowood points and bifaces that are often found in Meadowood assemblages (Granger 1978a; Ellis *et al* 1988). The bifacial tools form a minority of the total tool assemblage at Billiard, comprising only 15.25%.

Bifaces

The five bifaces from Billiard fall into three general categories on the basis of their stage of refinement in the process of biface reduction (Granger 1978a:18; Lennox 1986). Somewhat surprisingly, given the small sample size, the bifaces adequately illustrate several of the stages in Meadowood biface production as defined by Granger (1978a). Descriptive and metric data on the bifaces are presented in Table 6, and briefly described below.

A single roughly flaked specimen (Figure 7:b; Table 6) with tabular cortex adhering to one surface is a primary blank indicative of Stage 1 in the reduction sequence. This aborted piece was made on a corner struck flake and flaked into an ovate form on the ventral surface before being abandoned. The dorsal face displays two tabular surfaces that form an obtuse angle with each other indicating that the flake was initially struck from the corner of a tabular core. The piece is 15 mm thick and was likely discarded when it became apparent that it could not be thinned. It is made on high quality Onondaga chert, obviously procured from a primary source.

The second biface may be classed as a secondary blank indicative of Stage II in the biface reduction sequence. It is a large, ovate-triangular specimen, with large flake scars covering both faces (Figure 7:d). An attempt was made to thin this biface working from the point down, but this was apparently abandoned upon failure due to difficulty in thinning a thick area near the tip. This is a complete specimen, cross-mended from two fragments, one found in square l5SlOW, the other surface collected approximately five meters to the north.

The final three specimens are biface fragments that may be pieces of either tertiary blanks or the more refined quaternary blanks, more commonly referred to as cache blades (Granger 1978a). Two of them are edge fragments that are too small to permit classification. The third is a mid-section fragment of a well made biface with straight lateral edges and a lenticular cross-section (Figure 7:c). A single notch in one side has the appearance of a fresh break and is

considered to be of recent origin. This specimen, made of high quality Onondaga chert, is probably a section of a large Meadowood cache blade.

Projectile Points

Of the four projectile points in the Billiard collection, three are side-notched varieties that fall within the stylistic range of the Meadowood point type (Ritchie 1961; Fox 1980). All three were surface collected: two from the periphery of Locus A and one from Locus B. These locations are shown in Figure 2.

The first specimen (Figure 6:e; Table 6) is a fine example of the Meadowood type, with straight lateral edges, shallow side notches, and a thin lenticular cross-section. It may have been double-notched, a characteristic that is occasionally observed on Meadowood points, but the base is snapped just below the upper notches. Interestingly, the base has been retouched into a perforator on one side below the notch. Although Meadowood people are well known for recycling broken points and blades into a variety of tools, to our knowledge, this particular form has not been previously documented (Ellis *et al* 1988).

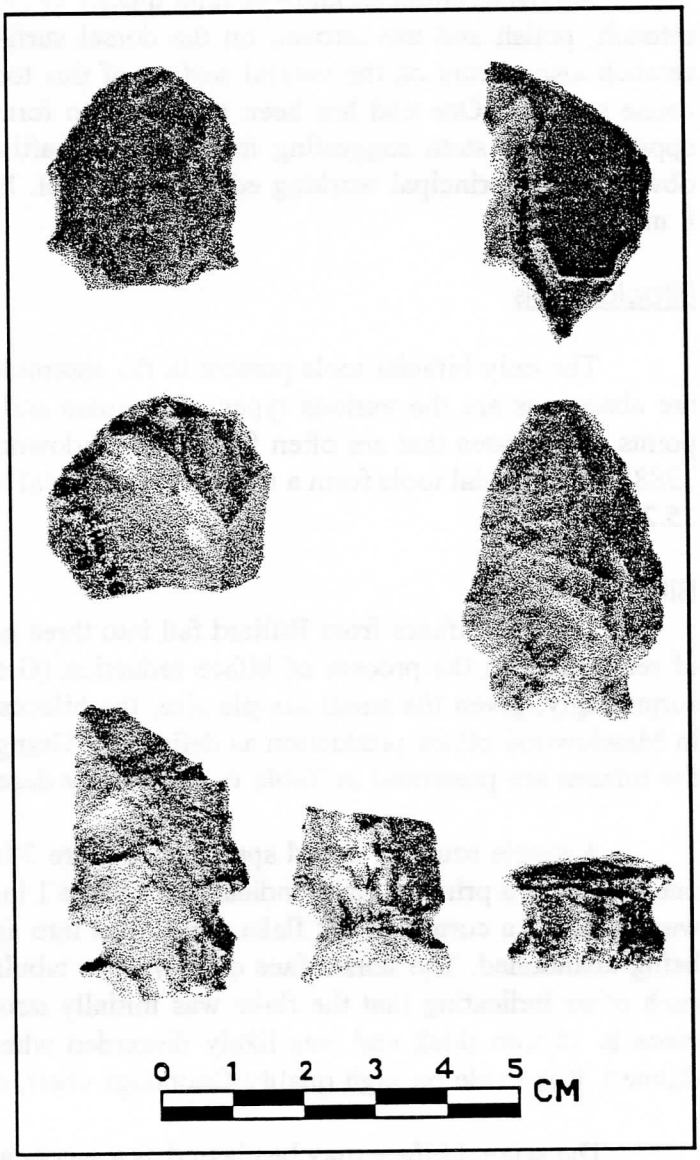

Figure 6: Lithic Tools From Billiard. a: graver; b-c: scrapers; d-g: points

The second specimen, also found within Locus A, is a basal fragment of a Meadowood-like point, broken just above the notches (Figure 6:g). The base is straight and is lightly ground, as are the notches themselves. Basal grinding is a Meadowood characteristic as noted by Justice (1987:171). The raw material differs from that of the other projectile points in the collection in that it is a dark grey material with many small inclusions. Through microscopic comparison with a hand sample it has been tentatively identified as Eastern Onondaga chert from New York State.

The third specimen, collected from Locus B, displays shallow side notches, straight lateral edges, and a heavily ground slightly concave base (Figure 6:f). It is also of Onondaga chert. This point is finely made and falls within the metric range of the Meadowood type, although the basal configuration is slightly aberrant.

The final projectile point cannot be attributed to the Meadowood occupation. It was found at the eastern end of Locus B near the field edge (Figure 2), and is probably not related to the other occupational debris on the site. It displays convex lateral edges, a small stemmed, slightly concave, unground base, and a fairly thick lenticular cross-section (Figure 6:d). Although it is not easily typed it is similar in form to the late Paleo Indian Hi Lo type, although it lacks basal grinding and alternate bevelling (Ellis 1981; Justice 1987).

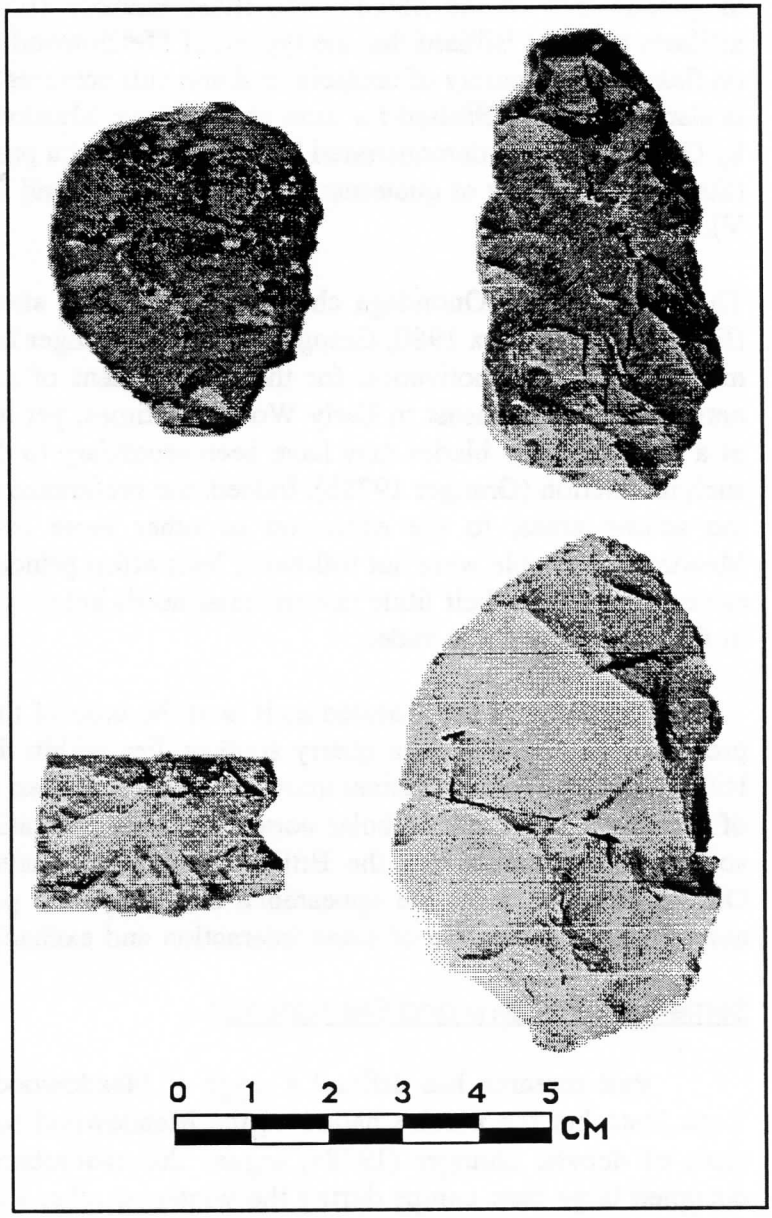

Figure 7: Lithic Tools From Billiard. a: unifacial knife; b-d: bifaces

Discussion

Cultural Affiliation

The identification of the Billiard site as an Early Woodland Meadowood component rests primarily on the presence of three Meadowood or Meadowood-like projectile points in the assemblage and the evidence for almost exclusive use of Onondaga chert by the site occupants. The Meadowood projectile point, estimated to date between 900 and 400 B.C., is one of the most distinctive point types in Ontario and New York sequences (Fox 1980; Ritchie 1961; Spence and Fox 1986). As discussed above, one of the Billiard specimens is a classic Meadowood type and two others are close approximations. The typical Meadowood piece has been recycled into a scraper/perforator. Recycling of Meadowood bifaces into a wide variety of tool forms has been well documented and can be considered a

diagnostic trait of the Meadowood lithic industry (Ellis *et al* 1988; Granger 1978a). Other artifacts found at Billiard that are typical of Meadowood include unifacial knife/scrapers, gravers on flakes, and a variety of unifacial end and side scrapers (Granger 1978a). As noted above, there is also evidence at Billiard for most stages in the Meadowood biface reduction sequence defined by Granger. This is demonstrated by the presence of a primary blank (Stage I), a secondary blank (Stage II), a tertiary or quaternary blank (Stages III and IV) and finished projectile points (Stage V).

The dominance of Onondaga chert on Meadowood sites has been noted by many researchers (Ellis *et al* 1988; Fox 1980; Granger 1978a,b). Granger has suggested that a desire for Onondaga material was one motivation for the development of a widespread trade and communication network in the northeast in Early Woodland times, yet he points out that the economic benefits of a trade in cache blades may have been secondary to the socio-political benefits derived from such interaction (Granger 1978b). Indeed, the preference of Onondaga chert on sites distant from the source areas, to the exclusion of other more readily accessible cherts, indicates that Meadowood people were not following least effort principles in selecting Onondaga. There were easier solutions to their lithic raw material needs but they were ignored in favour of participation in the Onondaga chert trade.

The Billiard site, located as it is at the base of the Niagara Peninsula in relatively close proximity to the Onondaga quarry sources, lies within the Meadowood heartland. As such, the Billiard people were not reliant upon the Onondaga chert trade. This is supported by the presence of a primary blank with tabular cortex probably indicating direct procurement from the quarry source. It is possible that the Billiard people may have been involved in some form of the Onondaga chert trade; the appearance of a projectile point of Eastern Onondaga chert in the assemblage is indicative of some interaction and exchange with more easterly groups.

Settlement Patterns and Site Function

Past research has defined a range of Meadowood settlement types in Ontario and New York State but the precise nature of the Meadowood settlement-subsistence system remains a topic of debate. Granger (1978a) argues that macroband groups in western New York State occupied large base camps during the winter months, while Spence and Fox (1986:30) suggest that winter dispersal of family groups to inland hunting camps was practised in southern Ontario. The New York base camps are located on elevated terraces or ridges near major rivers or lakes and possess extensive midden deposits, evidence of structures, and storage pits indicative of repeated long-term occupation. Excavated examples of these sites include Riverhaven No. 2 (Granger 1978a) and Scaccia (Funk 1973). Comparable sites have not yet been excavated in Ontario and the question of base camp seasonality will not be resolved until more data are available. On the basis of surface collected assemblages, Ellis, Fisher and Deller (1988) have suggested that large Meadowood sites such as Welke-Tonkonoh, Glen Oak, Lambert, and Brodie, all located on the Caradoc Sand Plain, may be southwestern Ontario equivalents of the New York base camps. The Caradoc sites exhibit more variable locational characteristics including floodplain, glacial strandline, and kettle pond associations (Ellis *et al* 1988).

Other aspects of the Meadowood subsistence round involved spring-summer camps focused primarily on fishing, and fall camps where mammal hunting, nut harvesting and nut processing appear to have been important activities. Examples of possible fishing camps include the Ferris site on the Lake Huron shoreline at Inverhuron Bay (Spence and Fox 1986) and the Sinking Ponds site in New York (Granger 1978a). Several fall hunting/nut collecting stations have been identified in southern Ontario including Dawson Creek on Rice Lake (Jackson 1982, 1986), Wyoming Rapids on the Ausable River, Boyd Lakefront on Lake Erie, and Neeb, near the Thames River (Spence and Fox 1986). Other identified Meadowood settlement types that are less relevant to the interpretation of the Billiard site include quarry sites, mortuary sites, and biface caches (Spence and Fox 1986; Ellis *et al* 1988).

The small size of the Billiard site and the limited occupational debris recovered would suggest short term use. These characteristics suggest that it was a special purpose camp occupied by a small family or task group for the purpose of exploiting specific resources. Yet, as a small inland camp that is not oriented to any major lake or river, it lacks the locational characteristics of most of the warm weather camps described above.

The tentative identification of nut remains from Billiard provides some evidence for a fall occupation, although Billiard differs from other identified fall camps in significant ways. Sites such as Dawson Creek, Boyd Lakefront, and Wyoming Rapids are more substantial components than Billiard and have yielded greater evidence of sub-surface features including pits and hearths, carbonized nut remains, as well as Vinette 1 pottery. It has also been suggested that the occurrence of ceramics on Early Woodland sites may be related to the seasonal exploitation of nuts, with the ceramic vessels being used primarily for processing and storage of nut oils (Ozker 1982:78; Jackson 1986:398). Although nut remains may be present, the Billiard site lacks the ceramic and hearth remains indicative of such activity.

The spatial distribution of the Billiard site artifacts, and the locational characteristics of the site itself, may provide the best evidence for the function of the Billiard site. The main occupation area, within the block excavation in Locus A, is interpreted as an activity area associated with mammal butchering and processing. This is supported by the large concentration of utilized flakes found in this area as well as the presence of formal scraping tools (Figure 5). The more diffuse distribution of material, including broken projectile points and flaking debris, around the periphery of the site (Figure 2), is interpreted as a product of hunt related activity such as re-hafting points and other tool maintenance that could have been carried on while watching for game in the valley below. As Figure 2 shows, Locus A is situated in a slight depression that would have been out of view, however, the areas to the north and south, including Locus B, would have afforded a broad view of the Big Creek valley. It is suggested, therefore, that the Billiard site represents a fall occupied hunting stand with an associated processing area.

Conclusions

Small plough disturbed aceramic sites, often referred to as "lithic scatters", are ubiquitous on the archaeological landscape in southern Ontario. As they usually lack significant intact

sub-surface features, these sites are sometimes considered to have little information potential and are often casualties of the heritage resource management process. The Billiard site was initially regarded as such a case; nonetheless, limited excavations to explore its potential resulted in the recovery of a small artifact assemblage that we believe can be attributed to a single, short-term Meadowood occupation during the Early Woodland period ca. 900 to 400 B.C..

Consideration of previous research on Meadowood settlement-subsistence patterns reveals that the Billiard site does not easily fit within currently defined settlement types related to seasonal resource extraction. Further examination of the composition and spatial distribution of the artifact assemblage suggests that hunting and mammal processing were dominant activities. In sum, the Billiard site is proposed as an example of a very small, short-term, inland hunting and processing camp that represents an addition to the known range of settlement types in the Meadowood settlement system. At the same time, it reinforces the view that, without due consideration of all types of archaeological sites, large and small, visible and nearly invisible, our understanding of prehistoric hunter-gatherer settlement systems will remain incomplete.

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Yes, you heard right! As this newsletter was going to the printer, we were informed of some jobs coming up in archaeology. Not 1, not 2, but **3** positions! For further information, read on:

The Ministry of Transportation, Southcentral Region, will be hiring three positions for the Archaeological component of the Environmental Unit. These are full-time, classified positions required for fulfilling MTO's field archaeological requirements for highway and related projects. Two MA level or equivalent and one BA level or equivalent positions will be offered.

Deadline for applications is the end of February, 1992. For details on where to send applications, and the particulars on the positions, contact Gary Warrick, Regional Archaeologist, Environmental Unit, Ministry of Transportation Southcentral region, 5th Floor, Atrium Tower, 1201 Wilson Avenue, Downsview Ontario M3M 1J8 (416) 235-5673

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